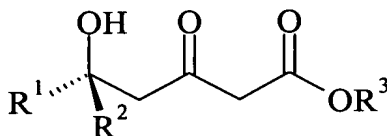


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What is claimed is

1. A process for preparing an optically active 5-hydroxy-3-ketoester of the formula **A1** or **A2**



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**A1** or **A2**

or one of the tautomers thereof,

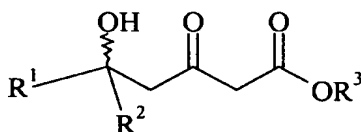
wherein  $R^1$  and  $R^2$  independently of each other represent hydrogen or a group which is selected from among  $C_1$ - $C_8$ -alkyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_6$ - $C_{10}$ -aryl and  $C_1$ - $C_8$ -alkylene- $C_6$ - $C_{10}$ -aryl, optionally with one, two or three substituents, selected from among hydroxy, halogen,  $C_1$ - $C_4$ -alkoxy and  $CF_3$ , where  $R^1$  and  $R^2$  do not simultaneously have the same meaning, and

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$R^3$  denotes a group selected from among  $C_1$ - $C_8$ -alkyl,  $C_1$ - $C_4$ -Haloalkyl,  $C_6$ - $C_{10}$ -aryl- $C_1$ - $C_8$ -alkylene and trihydrocarbylsilyl, characterised in that a

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racemic mixture of a 5-hydroxy-3-ketoester of formula **A**



**A**

wherein  $R^1$ ,  $R^2$  and  $R^3$  are as hereinbefore defined,

25

is resolved into the two enantiomeric 5-hydroxy-3-ketoester **A1** and **A2** by preparative high performance liquid chromatography (HPLC) over a chiral carrier material.

5     **2.**     The process according to claim 1, wherein the two separate enantiomeric 5-hydroxy-3-ketoesters **A1** and **A2** are each obtained in an enantiomer excess of at least 95%.

10    **3.**     The process according to claim 1, wherein  $R^1$  and  $R^2$  independently of each other are selected from the group consisting of methyl, ethyl, propyl, butyl, phenyl, benzyl, phenylethyl and phenylpropyl, optionally with a substituent selected from the group consisting of hydroxy, fluorine, chlorine, bromine, methoxy, ethoxy and  $CF_3$ .

15    **4.**     The process according to claim 1, wherein  $R^3$  is selected from the group consisting of methyl, ethyl, propyl, butyl and benzyl.

20    **5.**     The process according to claim 1, wherein  $R^1$  denotes 2-phenylethyl and  $R^2$  denote propyl or  $R^1$  denotes propyl and  $R^2$  denotes 2-phenylethyl.

25    **6.**     The process according to claim 1, wherein  $R^3$  denotes tert.-butyl or ethyl.

30    **7.**     The process according to claim 5, wherein  $R^1$  denotes 2-phenylethyl,  $R^2$  denotes propyl and  $R^3$  denotes ethyl or tert.-butyl.

35    **8.**     The process according to claim 1, wherein chemically modified polysaccharide is used as the chiral carrier material.

40    **9.**     The process according to claim 8, wherein the chemically modified polysaccharide is a polysaccharide which contains one or more optically active groups chemically bound.

45    **10.**    The process according to claim 8, wherein the polysaccharide is selected from the group consisting of dextrin, cyclodextrin, starch, amylose and cellulose.

5    **11.**    The process according to claim 8, wherein the carrier material is selected from the group consisting of tris(3,5-dimethylphenylcarbamate)-amylose, tris[(S)- $\alpha$ -methylbenzylcarbamate]-amylose, tris(3,5-dimethylphenylcarbamate)-cellulose, tris(4-methylbenzoate)-cellulose, cellulose triacetate, cellulose tribenzoate, tris(phenylcarbamate)-cellulose, tris(4-chlorophenylcarbamate)-cellulose,  
10    cellulose tricinnamate and cellulose tribenzoate.

15    **12.**    The process according to claim 8, wherein tris(3,5-dimethylphenylcarbamate)-amylose or tris(3,5-dimethylphenylcarbamate)-cellulose is used as the carrier material.

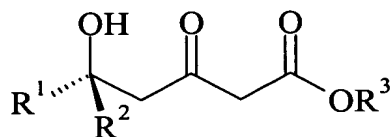
**13.**    The process according to claim 1, wherein the preparative HPLC is used in the form of SMB (Simulated Moving Bed) chromatography.

**14.**    A method for preparing an optically active dihydropyrone of formula **B**



or one of the tautomers thereof,

wherein  $R^1$  and  $R^2$  independently of each another denote hydrogen or a group selected from among  $C_1$ - $C_8$ -alkyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_6$ - $C_{10}$ -aryl and  $C_1$ - $C_8$ -alkylene- $C_6$ - $C_{10}$ -aryl, optionally with one, two or three substituents, selected from  
25    among hydroxy, halogen,  $C_1$ - $C_4$ -alkoxy and  $CF_3$ , wherein  $R^1$  and  $R^2$  do not simultaneously have the same meaning, wherein an optically active 5-hydroxy-3-ketoester of formula **A1** or **A2**



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A1 or A2

is cyclised according to methods known *per se* to form an optically active dihydropyrone of formula B.

10    **15.** The method of claim 14 wherein the dihydropyrone of formula B is tipranavir.